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Social deprivation, resulting in biological deprivation, involves a way of life, communicated to successive generations by the family, which shapes communication, language, thought and cognitive styles of problem-solving. Among important motivational and emotional factors associated with deprivation and ineffective learning are lower intelligence and educational achievement, limited problem solving approaches, inadequate social communication system, preference for immediate gratification, alienation, avoidance, withdrawal, violent aggression, fear of schools, rigid value systems, and hostility toward authority. Adult behavior can be changed; however, the longer a behavior exists, the more functional it becomes for the individual, and the more conflict there will be between the deprived subculture and middle-class society if a change is made. A person is only likely to acquire those behaviors he or others in his social environment view as appropriate. It is necessary to develop instruments which identify and scale the features of the environment most clearly related to the development of human characteristics before economical and effective programs can be designed to change behaviors. (pt)

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The Relation of Learning in Adults¹
to Social and Biological Deprivation

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Definitions and Relevance of the Issue

In the present context the terms "biological and social deprivation" refer to a complex pattern of life resulting from interacting biological and social conditions. The key to the pattern is "social deprivation," that is, the state of being deprived from before birth and throughout life of many of the advantages of American society: proper medical care prenatally, at birth, and throughout life; proper nutrition, especially during the growth years and, for the female in particular, during the reproductive years; good education and vocational training, restricted in extent only by individual capacity to benefit from it; a decent livelihood in a freely-chosen occupation; a relatively carefree old age; and all of these enjoyed within a stable and happy family and in a society which will, in the words of the motto of the State University of New York, "Let each become all he is capable of being." These specifications are undoubtedly incomplete; however, they are more than enough to start with.

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Biological deprivation, on the other hand, seems more fruitfully conceptualized as one of the effects rather than the root cause of social deprivation, although once the vicious circle has closed the question of cause and effect becomes moot. For example, social deprivation might account for a pregnant woman's not obtaining timely and proper prenatal care, possibly resulting in biological damage to her child. Should this, in turn, render the child unable to benefit fully from schooling, social deprivation for the child would likely be the result. Thus the vicious circle of social to biological to social deprivation would close. While this illustration is a very real possibility, less severe biological deprivation resulting from social deprivation can lead more subtly to another round of social deprivation. One need only speculate upon the degree to which simple hunger--much less malnutrition or starvation--affects a small child's ability to pay attention in the classroom and benefit from education.

Learning, in its broadest sense, will surely prove to be an important factor in the effectiveness of programs aimed at ameliorating the effects of social deprivation, and thus breaking the vicious circle. In addition to programs (such as Project Head Start) focused primarily on children, action is needed to increase the capabilities of adults for improving their own--and thus, also, their children's--lot in life. They must acquire, through a learning process, the information, skills, and--crucially--the attitudes necessary to social and economic advancement. The success of such programs will depend to a significant degree

upon the adult's effectiveness in making use of the aid and opportunities offered.

The Issues

There is ample evidence that intellectual level is related positively to various measures of socioeconomic well-being, both for children and adults. (Guilford, 1967; Hagen & Thorndike, 1955; Loevinger, 1940; Stewart, 1947; Terman & Merrill, 1937). Western culture has, historically, assumed this relationship to be due to hereditary factors, i.e., that those with lesser innate endowment are unable to reach the higher social and economic levels. Modern views of this correlation, however, emphasize the interaction of hereditary and environmental conditions (Hunt, 1961).

At this point three important questions are raised: (a) What are the particular environmental variables associated with rate of intellectual development during childhood? (b) What are the dimensions of the deprived adult's intellectual status?, and (c) How stable or resistant to change are the adult's characteristics? These three issues are taken up in turn in the following pages.

Development Antecedents of Deprived Adults' Intellectual Status

While this issue is not the focus of concern in this paper, some discussion of it is appropriate because of its overlap with the other two questions. That is, some guesses about the characteristics of the adult product of a deprived childhood can be made on the basis of what is known about the child.

Hebb, writing in 1949, speculated about the characteristics of the environment favorable to intellectual development. The child should, he thought, be exposed frequently to intelligent people, i.e., parents, teachers, acquaintances; he should encounter books, ideas, intelligent conversation; he should have opportunities to acquire common technical knowledge and skills; and should be exposed to people good at getting along with others, i.e., people with social skills. (Hebb, 1949, pp. 301-303)

There is research evidence from work both with humans and animals³ indicating that Hebb's guesses were very close to the truth. Lee (1951), for example, in examining the intelligence test performance of Southern-born Negro children who subsequently entered Philadelphia schools found a correlation between increase in intelligence score and length of pre-test residence in Philadelphia. (The assumption made in the present context is that the environment provided the children in Philadelphia was superior to that in the South.) An even more striking example of the power of the environment comes from the work of Harold M. Skeels and his colleagues.

³Research manipulating the environment of animals has confirmed the findings with humans. Environmental deprivation is associated with behavioral inadequacy, and apparently even with underdevelopment of the central nervous system. (Fuller, 1967; Hebb, 1949; Hunt, 1961; Rosenzweig, 1966; Sackett, 1965; Wilson, Warren, & Abbott, 1965)

An adult follow-up study (Skeels, 1966) of two groups of mentally-retarded orphanage children revealed that those who were placed in a special, enriched, institutional environment (and subsequently adopted) showed marked increases in test intelligence and were, as adults, normal and self-supporting, while the others, who remained in the relatively nonstimulating orphanage environment, showed progressive mental retardation and were, as adults, wards or inmates of institutions. Part of Skeels's conclusion is worthquoting:

It seems obvious that under present-day conditions there are still countless infants born with sound biological constitutions and potentialities for development well within the normal range who will become mentally retarded and noncontributing members of society unless appropriate intervention occurs. It is suggested by the findings of this study and others published in the past 20 years that sufficient knowledge is available to design programs of intervention to counteract the devastating effects of poverty, sociocultural deprivation, and maternal deprivation. (Skeels, 1966, p. 56)

Social deprivation is, however, much more than the simple absence of things. It is, in addition, a way of life, as might be gathered from the preceding material. Intellectual ability involves not only some ability to manipulate concepts and objects, but the individual's whole outlook on life as well. The kinds of problems an individual sees as worth solving, his willingness to apply his abilities to problem-solving, his ability to recognize a given situation first, as a problem and

second, as one he has the tools to solve--all of these are personality variables. As Wechsler (1950) noted, "...general intelligence however broadly defined, ...must be regarded as a manifestation of the personality as a whole."

That social deprivation involves a way of life, learned by one generation and passed on to the next, is well illustrated by the excellent work of Hess and Shipman (1965), from which the following lengthy but appropriate quotation is taken:

The arguments we wish to present here are these; first, that the behavior which leads to social, educational, and economic poverty is socialized in early childhood--that is, it is learned; second, that the central quality involved in the effects of cultural deprivation is a lack of cognitive meaning in the mother-child communication system; and third, that the growth of cognitive processes is fostered in family control systems which offer and permit a wide range of alternatives of action and thought and that such growth is constricted by systems of control which offer predetermined solutions and few alternatives for consideration and choice.

In this paper we will argue that the structure of the social system and the structure of the family shape communication and language and that language shapes thought and cognitive styles of problem-solving. In the deprived-family context this means that the nature of the control system which relates parent to child restricts the number and kind of alternatives for action and thought that are opened to the child;

such constriction precludes a tendency for the child to reflect, to consider and choose among alternatives for speech and action. It develops modes for dealing with stimuli and with problems which are impulsive rather than reflective, which deal with the immediate rather than the future, and which are disconnected rather than sequential. (Hess & Shipman, 1965)

Status of Deprived Adults

In light of the information gleaned from the childhood data, the following suggestions may be made about adult victims of early deprivation: the ability to learn as indexed by standard tests of intelligence is lower for both deprived children and deprived adults and, as age increases, the disparity between deprived and nondeprived individuals tends to increase; deprivation is associated with a lower level of educational achievement; and deprivation is associated with a way of life (or set of behavioral dispositions) including a limited view of alternative approaches to problem-solving, an inadequate social communications system, a tendency towards impulsive rather than reflective behavior, a preference for immediate as opposed to delayed gratification of needs, and a poorly-integrated (i.e., disconnected rather than sequential) utilization of limited modes of dealing with stimuli. These extrapolations may be supplemented by the ideas Puder and Hand (1968)⁴ derived from a survey of the psychological literature. Among the emotional factors commonly observed among the deprived assumed to be inimical to effective learning were alienation,

⁴Seen in abstract form only.

avoidance, hostility toward authority, withdrawal, violent aggression, fear of schools, self-image as an illiterate, rejection of the desire to develop intellectually, mental blocks against the world, and rigid value systems.

While examination of these variables is very important, care must be taken to avoid too-broad generalizations. Greenberg (1965), for example, examined the attitudes of fourth-grade Negro children from severely deprived environments and noted that they were not necessarily negative toward school and learning. And Pallone (1965), in a study conducted in South Bend, Indiana, noted that, "From the description of educational and vocational characteristics of hard-core unemployed workers, sex differences seem more profound than race differences in the underlying social-psychological-educational-economic dynamics." Reddick's (1966) study of rural Negroes in North Carolina showed a willingness on the part of these people to change jobs under favorable conditions--a "ray of hope," as he saw it--and not a condition usually assumed to obtain among the deprived. A similar type of optimism as to motivational variables is expressed by Miller and Zeller (1967), in their study of long-term unemployed West Virginians who were graduates of a ten-week course in highway construction machinery operation: "For the group of trainees represented in this study, work tends to mean money, and any other meanings that attach to work are apparently not controlling enough factors to be revealed through

association with behavior." The importance of this, as these authors observe, is that it belies "...the allegation that the hard-core unemployed attach little meaning to work because they are comfortable with the financial rewards of public assistance programs."

To summarize, there appear to be a number of important motivational and emotional factors associated with deprivation and inimical to effective learning; furthermore, there appear to be large individual and group differences of an order making it necessary to specify what kind of individuals (sex, ethnicity, age) from what kind of deprived environments when discussing the effects of deprivation. And there is room for optimism. Some of the work cited above, and common sense, recommends that we accentuate the positive, searching for those assets possessed by deprived individuals and capitalizing them in planning programs. For, as Bloom (1964, p. 189) observed, "It is unlikely that environments can be classed as good or bad in some total way. Furthermore, the use of evaluative terms may hamper the attempt to secure operational definitions of environments and may hamper our efforts to study the interrelationships between environments and the development of selected behavioral characteristics."

There is some quite specific data on the level of background knowledge possessed by hard-core unemployed adults in the previously cited work of Pallone (1965). Negro (40%) and Caucasian (38%) males and Negro females (22%) in South Bend were studied with several aptitude, educational, and vocational instruments. The typical individual (mean age = 41.9 yrs.) had

completed 7.9 years of formal schooling, was able to comprehend paragraph meaning at a level equivalent to a child with 3.1 years of school, understood word meaning = 3.8 yrs., did arithmetic reasoning = 4.4 yrs., did arithmetic computation = 4.0 yrs., used English language = 2.7 yrs., and spelled at a level equivalent to 3.9 yrs. of school. Overall, his educational age was equivalent to 3.6 yrs. of school although he'd completed 7.9 yrs. of formal work. As to vocational aptitudes, as measured by the General Aptitude Test Battery (GATB), where the national population mean is 100, the typical trainee scored 70 in verbal aptitude, 57 in numerical, 69 in spatial, 55 in form perception, 70 in clerical perception, 62 in motor coordination, 71 in finger dexterity, 82 in manual dexterity, and 64 in learning ability. These average scores were, in most cases, a full standard deviation below the population mean, or looking at it another way, below approximately the 17th percentile. In all measures the Negro male averages were slightly below those for the male Caucasians, while the average Negro female scored generally higher in educational achievement and vocational aptitudes, although lower than all males on three of four intelligence tests.

Stability of Adult Characteristics

McGeoch (1942, p. 445) noted that, "After small amounts of learning early in the life of the individual, every instance of learning is a function of the already existent learned organization of the subject; that is, all learning is influenced by transfer." If the truth of this

observation may be granted, as most scholars of the area would be willing to do, what do the low levels of intellectual, educational, and vocational abilities possessed by the deprived adult mean in terms of modifiability? What resources does he have to transfer to new learning? Quite obviously, it seems, the first task he faces is to bolster his foundation in the basic tools of learning, that is, in the traditional "three R's."

Upgrading of basic educational and vocational skills will also provide an additional benefit in the form of "nonspecific transfer of learning," that is, in "learning-how-to-learn." The individual who has been out of the routine of formal schooling for any appreciable length of time--perhaps for as little as two or three years--is likely to have lost a substantial portion of whatever he may have known about how to learn: how to study, how to concentrate or focus attention, how to organize the work, how to take notes, and a myriad of other "mental adjustments" and attitudes towards the process of learning. Any kind of exposure to formal educational procedures (for example, in acquiring or reacquiring the basic tools of learning--the three R's) is likely to increase the adult's abilities to benefit from later training.

In general, it may be hypothesized that any individual, deprived or otherwise, will find it increasingly difficult to change his way of life as he increases in age. Much more is involved than sheer ability to learn or to profit from experience. Specifically--and careful note should be taken of this point--there is to this author's knowledge no evidence to suggest that age need be taken seriously as a criterion in

selecting people for an educational, training, or retraining program, at least up to the usual retirement age. In summarizing his chapter on learning Birren (1964, p. 169) said:

The evidence that has been accumulating on both animal and human learning suggests that changes with age in the primary ability to learn are small under most circumstances. When differences do appear, they seem to be more readily attributed to processes of perception, set, attention, motivation, and the physiological state of the organism (including that of disease states) than to a change in the primary capacity to learn.

...At the present time, there is little evidence to suggest that there is an intrinsic age difference in learning capacity over the employed years; i.e., up to age sixty.

Thus, to repeat for emphasis, the ability of an individual to benefit from educational efforts is not impaired significantly with age up to the usual retirement age.

There are, however, factors other than ability to learn to be taken into account when considering the age of the deprived adult. These factors are involved mainly with the nonintellective, or personality-motivational-emotional elements referred to earlier. In general, as discussed by Bloom (1964), it appears that the more fully developed a characteristic is, the more difficult it will be to change it, and the more costly change will be to the individual. In particular, the longer an individual has

lived the "way of life" associated with a deprived environment--as illustrated by the Hess and Shipman work earlier cited in this paper, --the greater will be the emotional cost to him in discarding old and acquiring new behavioral dispositions. Furthermore, the greater the degree to which change causes a conflict between the value system of the deprived subculture and that of middle-class society, the less the support the individual will receive from his social environment, and the greater will be his alienation from his family and friends (Madsen, 1964).

Summary

As the reader will have noted, most of what has been presented is based on an extrapolation to adulthood of a limited amount of data on the characteristics of deprived children, plus an examination of a still smaller amount of information about deprived adults, all mixed together and leavened with some general psychological principles. It presents an ambiguous and confused picture which, the author feels, reflects with varying degrees of purity both the state of the art and his own lack of clarity of thought in this very complex area. A great deal of effort over an extended period of time will be required to sift existing data and theory, analyze and integrate it, and produce a clear picture of what is known, what questions remain to be answered, and what kind of action programs will be required to solve the important problems of social and biological deprivation.

Some things are, however, fairly apparent. One of the most obvious is the lack of precision in the definition of "deprived environments" and, for that matter, in the definition of environmental variables in general. Bloom (1964, p. 221) has made this abundantly clear in his call for the "...development of instruments which identify and scale the features of the environment most clearly related to the development of the [human] characteristic." He also sees the need for an attack on the problem of determining "the process by which the individual and the environment interact to produce changes in the individual. ...Such an attack should also reveal the ways in which different parts of an individual's environment may be used to effect desirable changes in the individual as well as ways in which environments may be created which will bring about desired developments." (Bloom, 1964, p. 222)

This latter point is, of course, the ultimate focus in this context. It is clear that separating for study an individual's cognitive or intellectual resources from his personality makes little sense in the last analysis. The intellectual and nonintellectual variables interact in a complex way to determine performance on learning tasks, and are differentially affected by environmental characteristics. There are quite probably a number of intervening or mediating variables coming into play between environment and intelligence, and environment and personality factors.

H. A. Murray's (1938) conceptualization of the interaction of the individual with his environment provides an interesting and useful way of viewing the problem.⁵ The environment is viewed as having a variety of potentialities for need satisfaction. The potentialities are termed presses. Two kinds of presses are defined: (a) the Alpha press, or the potential of the environment for need satisfaction as it actually exists, and (b) the Beta press, or the individual's perception of the need satisfying potential of the environment. The deprived individual seems likely to have two kinds of "press problems." In the first place, his immediate environment may utterly lack certain need satisfiers, and thus his experience will not have provided him with opportunities to explore the range of potentialities available for need satisfaction in the wider world. He does not have the cognitive tools at his disposal appropriate to maximal exploitation of the larger environment, nor does he feel the necessity of acquiring these tools. Certain kinds of learning tasks--basic education and vocational training, for example--may strike him as utterly irrelevant. His basic orientation may be, as has been earlier suggested, toward immediate, albeit suboptimal, need satisfaction, whereas the ability to delay gratification until tools were acquired would result in more satisfactory need reduction, and over the longer haul.

⁵The writer is indebted to his teacher, the late Professor Raymond G. Kuhlen, for exposing him to the power and heuristic value of Murray's model. Prof. Kuhlen used the model frequently and profoundly in considering a wide range of psychological issues.

The second kind of "press problem" involves the Beta press, that is, the need satisfying potentials as he perceives them. It may be quite clear to him that he could satisfy his needs in his environment if only he could get access to certain things. One obvious ploy is to resort to socially unacceptable means, e.g., theft. An equally likely--and perhaps, for most, the more likely--outcome is bitter frustration. This has undesirable motivational (and cognitive) consequences. For what is the purpose of learning a socially acceptable mode of press acquisition when it seems unlikely that society will allow him to exercise those skills in any case? One of the major environmental handicaps to mental development treated by Vernon involved adult roles and adolescent aspirations, and is very much to the point here:

Here there is little definite evidence. But it is reported of some North American Indian and other cultures that children show fairly normal intellectual development till adolescence, but then, when they realize the depressed status of their minority culture --the absence of opportunity for progress and advancement--apathy sets in. To adapt Gordon Allport's description of personality as "Becoming," intelligence may depend on the future as well as on the past. (Vernon, 1965)

The point to be made here is that an individual is likely to expend his energy to acquire only those behavioral dispositions he views--or is taught by others in his social environment to view--as necessary, appropriate, and customary to the way of life he expects or is expected to lead.

Roger Barker, and other psychological ecologists, might say that the behavior learned is that appropriate to its setting.

The social issue is clear. Both the problems of children growing up in deprived environments, and of the adults who provide the social environment for those children, must be solved, and quickly. Learning, and its intellectual, motivational, and personality determinants, are key factors. But economical and effective programs cannot be designed until more is known about the nature of deprived environments and their effects upon individuals of different sexes, ages, and ethnic value systems. More research effort needs to be directed to these questions.

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